

In the claims:

1. (Currently Amended) A composition of matter which comprises an isolated nucleic acid according to SEQ ID NO: 1 that encodes a sequence according to SEQ ID NO:2.

2. (Original) A composition of matter which comprises an isolated nucleic acid which comprises nucleotides 1234-3618 of SEQ ID NO: 1.

3. (Original) A composition of matter which comprises an isolated peptidic sequence encoded by a nucleic acid consisting of nucleotides 1234-3618 of SEQ ID NO: 1.

4. (Original) A composition of matter which comprises an isolated peptidic sequence according to SEQ ID NO: 2.

5. (Original) A composition of matter which comprises an isolated peptidic sequence comprising amino acids 36-217 of SEQ ID NO: 2.

6. (Original) A composition of matter which comprises an isolated peptidic sequence comprising amino acids 233-794 of SEQ ID NO: 2.

7. (Original) A composition of matter according to claim 4 which inactivates AHL.

8. (Original) A method of modulating AHL signaling activity which comprises contacting said AHL with a composition of matter according to any one of claims 3 or 4-7.

9. (Original) A transgenic plant harboring a nucleic acid of claim 2.

10. (Original) A transgenic non-human animal harboring a nucleic acid of claim 2.

11. (Original) A method of controlling a bacterial disease in a mammal in need thereof which comprises administering to said mammal a composition of matter according to any one of claims 3 or 4-7, wherein the expression of pathogenic genes of said bacteria are regulated by AHL signals.

12. (Original) A method of claim 12 wherein said mammal is a human.

13. (Original) A method of controlling a bacterial disease in a plant in need thereof which comprises administering to said plant a composition of matter according to any one of claims 3 or 4-7, wherein the expression of pathogenic genes of said bacteria are regulated by AHL signals.

14. (Original) A method of controlling a bacterial disease in a mammal in need thereof which comprises administering to said mammal a composition of matter of claim 2 and its peptide product, wherein the expression of pathogenic genes of said bacteria are regulated by AHL signals.

15. (Original) A method of claim 14 wherein said mammal is a human.

16. (Original) A method of controlling a bacterial disease in a plant in need thereof which comprises administering to said plant a composition of matter of claim 2, wherein the expression of pathogenic genes of said bacteria are regulated by AHL signals.

17. (Original) A method of controlling a bacterial disease in a plant using any bacterial species containing the composition of matter of claim 2.